

CLAIMS

WHAT IS CLAIMED IS:

1. An ultra-wideband communication system for a wired network, comprising:
an ultra-wideband transmitter structured to transmit an ultra-wideband signal through the wired network; and
an ultra-wideband receiver structured to receive the ultra-wideband signal from the wired network.
2. The ultra-wideband communication system of claim 1, wherein the ultra-wideband signal comprises an impulse radio signal.
3. The ultra-wideband communication system of claim 1, wherein the ultra-wideband signal comprises a pulse of electromagnetic energy having a duration that can range between about 0.1 nanoseconds to about 100 nanoseconds.
4. The ultra-wideband communication system of claim 1, wherein the ultra-wideband signal comprises a pulse of electromagnetic energy having a duration that can range between about 0.1 nanoseconds to about 100 nanoseconds and a power that can range between about 30 power decibels to about -90 power decibels, as measured at a single frequency.
5. The ultra-wideband communication system of claim 1, wherein the ultra-

wideband transmitter comprises an ultra-wideband pulse modulator that is structured to transmit a multiplicity of ultra-wideband signals.

6. The ultra-wideband communication system of claim 1, wherein the ultra-wideband receiver comprises an ultra-wideband pulse demodulator that is structured to receive a multiplicity of ultra-wideband signals.

7. The ultra-wideband communication system of claim 1, wherein a wire employed in the wired network is selected from a group consisting of: an optical fiber ribbon, a fiber optic cable, a single mode fiber optic cable, a multi-mode fiber optic cable, a twisted pair wire, an unshielded twisted pair wire, a plenum wire, a PVC wire, a coaxial cable, and an electrically conductive material.

8. The ultra-wideband communication system of claim 1, wherein the wired network is selected from a group consisting of: a power line, an optical network, a cable television network, a community antenna television network, a community access television network, a hybrid fiber coax system network, a public switched telephone network, a wide area network, a local area network, a metropolitan area network, a TCP/IP network, a dial-up network, a switched network, a dedicated network, a nonswitched network, a public network and a private network.

9. A method of transmitting data through a community access television network, the method comprising the steps of:

providing the community access television network; and
transmitting an ultra-wideband signal through the community access television network.

10. The method of claim 9, wherein the community access television network is selected from the group consisting of: an optical network, a cable television network, a community antenna television network, and a hybrid fiber coax television network.

11. The method of claim 9, wherein the ultra-wideband signal comprises an impulse radio signal.

12. The method of claim 9, wherein the ultra-wideband signal comprises a pulse of electromagnetic energy having a duration that can range between about 0.1 nanoseconds to about 100 nanoseconds.

13. The method of claim 9, wherein the ultra-wideband signal comprises a pulse of electromagnetic energy having a duration that can range between about 0.1 nanoseconds to about 100 nanoseconds and a power that can range between about 30 power decibels to about -90 power decibels, as measured at a single frequency.

14. The method of claim 9, wherein the ultra-wideband signal is used to transmit data selected from a group consisting of: telephony data, high-speed data, digital video data, digital television data, Internet communication data and audio data.

15. The method of claim 9, wherein the ultra-wideband signal is transmitted substantially simultaneously with a community access television signal.

16. The method of claim 9, wherein the community access television signal is used to transmit data selected from the group consisting of: telephony data, high-speed data, digital video data, digital television data, Internet communication data and audio data.

17. The method of claim 9, wherein the ultra-wideband signal and a community access television network signal use a substantially common portion of an electromagnetic radiation spectrum.

18. The method of claim 9, wherein the ultra-wideband signal and a community access television network signal are transmitted in a frequency band that can range from between about 100 KHz to about 3 GHz.

19. The method of claim 9, wherein the ultra-wideband signal and a community access television network signal use separate portions of an electromagnetic radiation spectrum.

20. The method of claim 9, wherein the ultra-wideband signal is transmitted in a frequency band that can range from between about 880 MHz to about 3 GHz and a community access television network signal is transmitted in a frequency band that can range from between about 100 KHz to about 3 GHz.

21. The method of claim 9, wherein the ultra-wideband signal is transmitted in a frequency band that can range from between about 1 GHz to about 3 GHz and a community access television network signal is transmitted in a frequency band that can range from between about 1 MHz to about 900 MHz.

22. An ultra-wideband system structured to transmit and receive data through a network that includes a wired medium, the ultra-wideband system comprising:

an ultra-wideband transmitter positioned at a first location on the network, the ultra-wideband transmitter structured to transmit an ultra-wideband signal through the wired medium; and

an ultra-wideband receiver positioned at a second location on the network, the ultra-wideband receiver structured to receive the ultra-wideband signal from the wired medium.

23. The ultra-wideband system of claim 22, wherein the network is selected from a group consisting of: a power line, an optical network, a cable television network, a community antenna television network, a community access television network, a hybrid fiber coax system network, a public switched telephone network, a wide area network, a local area network, a metropolitan area network, a TCP/IP network, a dial-up network, a switched network, a dedicated network, a nonswitched network, a public network and a private network.

24. The ultra-wideband system of claim 22, wherein the wired medium is selected from a group consisting of: an optical fiber ribbon, a fiber optic cable, a single mode fiber optic cable, a multi-mode fiber optic cable, a twisted pair wire, an unshielded twisted pair wire, a plenum wire, a PVC wire, a coaxial cable, and an electrically conductive material.

25. The ultra-wideband system of claim 22, wherein the ultra-wideband signal comprises an impulse radio signal.

26. The ultra-wideband system of claim 22, wherein the ultra-wideband signal comprises a pulse of electromagnetic energy having a duration that can range between about 0.1 nanoseconds to about 100 nanoseconds.

27. The ultra-wideband system of claim 22, wherein the ultra-wideband signal comprises a pulse of electromagnetic energy having a duration that can range between about 0.1 nanoseconds to about 100 nanoseconds and a power that can range between about 30 power decibels to about -90 power decibels, as measured at a single frequency.

28. The ultra-wideband system of claim 22, wherein the ultra-wideband transmitter comprises an ultra-wideband pulse modulator that is structured to transmit a multiplicity of ultra-wideband signals.

29. The ultra-wideband system of claim 22, wherein the ultra-wideband receiver comprises an ultra-wideband pulse demodulator that is structured to receive a multiplicity of ultra-wideband signals.